

111TH CONGRESS  
1ST SESSION

# S. 782

To provide for the establishment of the National Volcano Early Warning  
and Monitoring System.

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IN THE SENATE OF THE UNITED STATES

APRIL 2, 2009

Ms. MURKOWSKI (for herself and Mr. BEGICH) introduced the following bill;  
which was read twice and referred to the Committee on Energy and Nat-  
ural Resources

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## A BILL

To provide for the establishment of the National Volcano  
Early Warning and Monitoring System.

1 *Be it enacted by the Senate and House of Representa-*  
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “National Volcano Early  
5 Warning and Monitoring System Act”.

6 **SEC. 2. FINDINGS.**

7 Congress finds that—

8 (1) the United States and the territories of the  
9 United States contain 169 hazardous volcanoes;

1           (2) since 1980, eruptions have claimed many  
2 lives and cost billions of dollars in property damage  
3 in the United States;

4           (3) ash eruptions pose a hazard to high-flying  
5 jet aircraft, including the more than 20,000 pas-  
6 sengers who travel on jets over Alaska every day;

7           (4) in 1989, an eruption of Redoubt Volcano,  
8 Alaska, caused in-flight failure of all 4 engines of a  
9 passenger Boeing 747 aircraft;

10          (5) international flights over the Commonwealth  
11 of the Northern Mariana Islands and the intense do-  
12 mestic air traffic of the Pacific Northwest also face  
13 potential engine failure in the event of an eruption;

14          (6) mudflows from ice-clad Cascade volcanoes  
15 of the States of Washington, Oregon, and California  
16 pose a serious hazard to cities and transportation  
17 arteries in the Pacific Northwest;

18          (7) lava flows, toxic gas emissions, and explo-  
19 sions impact residents and visitors to Hawaii and  
20 have the potential to cause catastrophic property  
21 damage;

22          (8) frequent seismic unrest requires careful  
23 monitoring in the Mammoth Lakes area of Cali-  
24 fornia and Yellowstone National Park in the States  
25 of Wyoming, Montana, and Idaho;

1           (9) modern technology, in the form of geo-  
2           physical monitoring networks on the ground and the  
3           use of near-real time satellite data, makes possible  
4           warnings before eruptions, giving emergency re-  
5           sponse agencies and the public time to prepare,  
6           which minimizes potential damage to property and  
7           loss of life;

8           (10) the efficacy of monitoring is being dem-  
9           onstrated by the forecast and subsequent tracking of  
10          explosive eruptions of Redoubt Volcano by the Alas-  
11          ka Volcano Observatory, a partnership of the United  
12          States Geological Survey, the University of Alaska  
13          Fairbanks, and the Alaska Division of Geological  
14          and Geophysical Surveys;

15          (11) the United States Geological Survey and  
16          the university and State partners of the United  
17          States Geological Survey operate—

18                 (A) the Alaska Volcano Observatory lo-  
19                 cated in Anchorage and Fairbanks, Alaska;

20                 (B) the Cascades Volcano Observatory lo-  
21                 cated in Vancouver, Washington;

22                 (C) the Hawaiian Volcano Observatory lo-  
23                 cated in Hawaiian Volcanoes National Park,  
24                 Hawaii;

1 (D) the Yellowstone Volcano Observatory  
 2 located in Yellowstone National Park in the  
 3 State of Wyoming, Montana, and Idaho; and

4 (E) the Long Valley Observatory, located  
 5 in Mammoth Lakes and Menlo Park, California;  
 6 and

7 (12) a detailed survey of the volcanoes in the  
 8 United States and the monitoring status of those  
 9 volcanoes has revealed a serious monitoring gap,  
 10 leaving the United States exposed to preventable  
 11 damage from large volcanic eruptions.

12 **SEC. 3. DEFINITIONS.**

13 In this Act:

14 (1) SECRETARY.—The term “Secretary” means  
 15 the Secretary of the Interior, acting through the Di-  
 16 rector of the United States Geological Survey.

17 (2) SYSTEM.—The term “System” means the  
 18 National Volcano Early Warning and Monitoring  
 19 System established under section 4(a)(1).

20 **SEC. 4. NATIONAL VOLCANO EARLY WARNING AND MONI-**  
 21 **TORING SYSTEM.**

22 (a) ESTABLISHMENT.—

23 (1) IN GENERAL.—The Secretary shall establish  
 24 within the United States Geological Survey a pro-  
 25 gram, to be known as the “National Volcano Early

1 Warning and Monitoring System”, to monitor, warn,  
2 and protect citizens of the United States from undue  
3 and avoidable harm from volcanic activity.

4 (2) PURPOSES.—The purposes of the System  
5 are—

6 (A) to organize, modernize, standardize,  
7 and stabilize the monitoring systems of the vol-  
8 cano observatories in the United States; and

9 (B) to unify the monitoring systems of vol-  
10 cano observatories in the United States into a  
11 single interoperative system.

12 (3) OBJECTIVE.—The objective of the System is  
13 to monitor all the volcanoes in the United States at  
14 a level commensurate with the threat posed by the  
15 volcanoes by—

16 (A) upgrading existing networks on mon-  
17 itored volcanoes; and

18 (B) installing new networks on unmoni-  
19 tored volcanoes.

20 (b) SYSTEM COMPONENTS.—

21 (1) IN GENERAL.—The System shall include—

22 (A) a national volcano watch office that is  
23 operational 24 hours a day and 7 days a week;

24 (B) a national volcano data center; and

1 (C) an external grants program to support  
2 research in volcano monitoring science and  
3 technology.

4 (2) MODERNIZATION ACTIVITIES.—Moderniza-  
5 tion activities under the System shall include the  
6 comprehensive application of emerging technologies,  
7 including digital broadband seismometers, real-time  
8 continuous global positioning systems, radar satellite  
9 interferometry, and spectrometry to measure gas  
10 emission.

11 (c) MANAGEMENT.—

12 (1) MANAGEMENT PLAN.—

13 (A) IN GENERAL.—Not later than 90 days  
14 after the date of enactment of this Act, the Sec-  
15 retary shall submit to Congress a 5-year man-  
16 agement plan for establishing and operating the  
17 System.

18 (B) INCLUSIONS.—The management plan  
19 submitted under subparagraph (A) shall in-  
20 clude—

21 (i) annual cost estimates for mod-  
22 ernization activities and operation of the  
23 System;

24 (ii) annual milestones, standards, and  
25 performance goals; and

1 (iii) recommendations for, and prog-  
2 ress towards, establishing new, or enhance-  
3 ing existing, partnerships to leverage re-  
4 sources.

5 (2) ADVISORY COMMITTEE.—The Secretary  
6 shall establish an advisory committee to assist the  
7 Secretary in implementing the System, to be com-  
8 prised of representatives of relevant agencies and  
9 members of the scientific community appointed by  
10 the Secretary.

11 (3) PARTNERSHIPS.—The Secretary may enter  
12 into cooperative agreements with universities and  
13 State agencies designating the universities and agen-  
14 cies as volcano observatory partners for the System.

15 (4) COORDINATION.—The Secretary shall co-  
16 ordinate the activities under this Act with the heads  
17 of relevant Federal agencies, including—

18 (A) the Secretary of Transportation;

19 (B) the Administrator of the Federal Avia-  
20 tion Administration;

21 (C) the Administrator of the National Oce-  
22 anic and Atmospheric Administration; and

23 (D) the Director of the Federal Emergency  
24 Management Administration.

1       (d) ANNUAL REPORT.—Annually, the Secretary shall  
2 submit to Congress a report that describes the activities  
3 carried out under this Act.

4 **SEC. 5. AUTHORIZATION OF APPROPRIATIONS.**

5       There is authorized to be appropriated to the Sec-  
6 retary to carry out this Act \$15,000,000 for fiscal year  
7 2009 and each fiscal year thereafter.

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